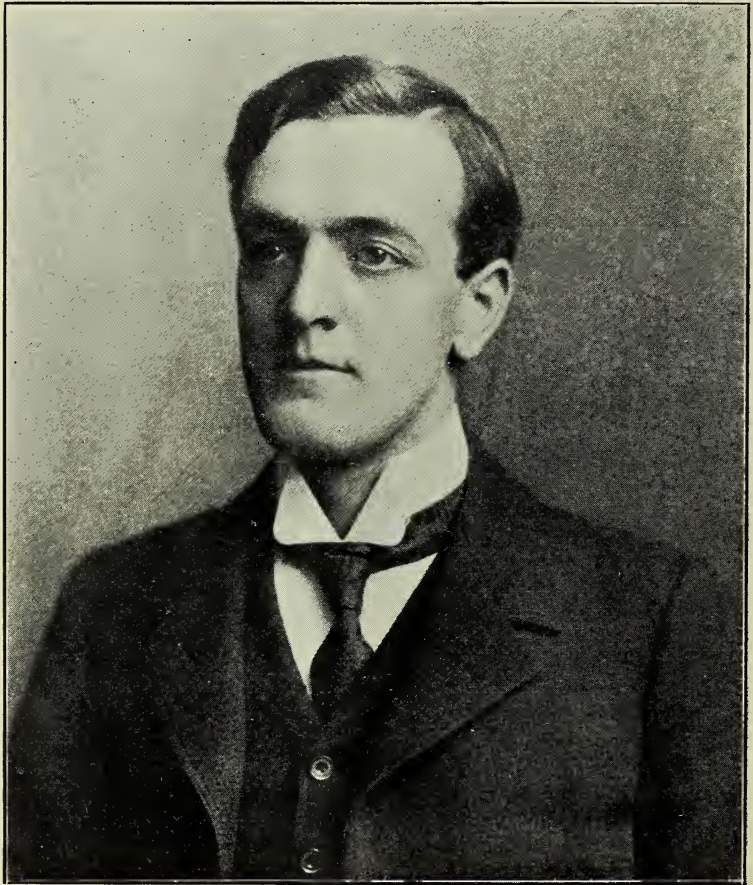


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HOMER CHARLES PRICE.

[See page 151.]

THE AGRICULTURAL STUDENT.

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Editorial Chat.....	143
Thesis Subjects	143
Occupation of Former Students ..	144
Taking Account of Stock Results of a Year's Work on Woodland Farm	148
Homer Charles Price, M. Sc.....	151
My Impressions of the Chicago Trip	152
The Food Value of Meats	154
The Farmer and the Agricultural College	156
New Books.....	159

EDITORIAL CHAT.

A very interesting series of five lectures was given recently before the agricultural students by Mr. Joseph E. Wing, of Mechanicsburg, upon live stock topics. Mr. Wing has had a life long experience on the farm as a grower of live stock and has traveled extensively over the United States as a Farmer's Institute lecturer and as special live stock correspondent for the *Breeders' Gazette*. He is a thorough student and a careful observer, and therefore possesses a large store of first hand information concerning the live stock industry of the United States. His pleasant manner of presentation also added to the interest of his lectures.

Mr. Wing is enthusiastic over alfalfa as a stock food on our fertile, well-drained Ohio soils. We are glad to present, in another column, an article by Mr. Wing, which contains a part of what he said upon this subject.

THESIS SUBJECTS.

The following thesis subjects have been selected by the members of the graduating class of 1901 in Agriculture and Domestic Science:

B. Sc. (Domestic Science).—Clara Armstrong, Columbus, "History and



Development of House Drainage"; Mary Crawford, Blaine, "Studies in Dietetic Menus for a Family of Five"; Florence Derby, Columbus, "Bibliography of Foods"; Elma B. Perry, Piqua, "Bibliography of Domestic and Municipal Sanitation and Hygiene."

M. Sc. (Agr.).—William H. Gilmore, Basil, "Fluctuations in Prices of Farm Products in the United States."

B. Sc. (Agr.).—Albert F. Conradi, New Bremen, O., "A Study of Cicidomyidæ and Their Effect Upon Vegetation"; Merritt Harper, Grove City, O., "The Draft of the Plow"; Nelson Prentice Neill, Venice, O., "A Study of the Agricultural Conditions of Ohio"; John Cole Perry, Columbia Station, O., "A Comparison of the Structure and Durability of Modern Self-Binders"; Freeman Wilbert Schaeffer, Columbus, "Pasteurization as a Means of Controlling Fermentation in Milk"; Addison Hogan Snyder, Tacoma, O., "The Conformation of Market Draft Horses."

OCCUPATION OF FORMER STUDENTS.

The new catalogue of the College of Agriculture and Domestic Science is just issuing from the press. This catalogue is a good specimen of the printer's art and contains much valuable information for prospective students of agriculture and domestic science. The list of alumni of this college and of the ex-students since 1892, deserve a careful study. THE AGRICULTURAL STUDENT has taken the trouble to make the following summary table of occupations:

Unknown	60
Farmers, gardeners and dairymen.....	174
Creamery operators, butter and cheese makers.....	48
Farm superintendents and employees...	8
Employees of agricultural departments, colleges and stations.....	28
Editors of agricultural and horticultural papers	3

Young women	36
Students in other colleges	19
All other occupations	59
Total	435

Of the 435 ex-students, 115 consist of young women, students in other colleges and persons whose occupations are unknown. This leaves 320 men who have settled occupations. Of these 261 or 82 per cent., are engaged in agricultural pursuits.

It has occurred to THE AGRICULTURAL STUDENT Magazine that it would be of interest to our readers to have some account of the younger graduates of the four-year courses of the College of Agriculture and Domestic Science. For this purpose we have begun with the Class of 1895.

Charles W. Burkett, '95, was for two years after graduation Assistant in Agriculture in the Ohio State University, and was then elected Associate Professor of Agriculture in the New Hampshire College of Agriculture. One year later, he was advanced to the Professorship of Agriculture in the same institution. Mr. Burkett, although a young man, has made a name for himself as an agricultural teacher, a Farmer's Institute worker, and an agricultural writer.

Renick W. Dunlap, '95, was, during his college course, not only a good student, but one of the best foot ball players that O. S. U. has ever seen. Since graduating, he has shown the same energy in developing his Congo stock farm at Kingston that he did during his student days in the class room and on the gridiron. Mr. Dunlap makes a specialty of Shorthorn cattle and Percheron horses. His success in winning premiums at the fairs speaks well of his work. During this winter, Mr. Dunlap was chosen by the State Board of Agriculture as one of the state speakers at Farmers' Institutes. In this connection

it may be stated that one of the most acceptable speakers on the state force, H. P. Miller, Sunbury, O., graduated from the course in veterinary medicine in 1897.

Ernest J. Riggs, '95, spent one year after graduation at Cornell University as a post-graduate student in Horticulture, from which place he was called to the New Hampshire College of Agriculture as Assistant in Horticulture, where he did excellent work, but resigned at the end of one year to take charge of his own large fruit farm at Raccoon Island in this state. He makes a specialty of small fruits and apples.

Delbert Alonzo Crouner, '96, became connected with the Ohio Agricultural Experiment Station at Wooster, where he had charge of the Experimental Dairy until the test of the breeds of cattle was abandoned on account of disease. In 1898, he had charge of the Holstein-Friesian herd on the Dellhurst Farm, Mentor. During the past year, he was with the Hygia Milk Condensing Company of Erie, Pa. During the past two winters, he has been Assistant in Butter Making in the O. S. U. Dairy School, and has been quite successful as a teacher. He has just rented and begun to operate a creamery at West Jefferson, Ohio.

The last that was heard, Philip Lewis Pfarr, '96, was headed for the Klondike. Those who know his thrift, predict that he will some day present his alma mater with \$100,000.

Murray M. Rarick, '96, found he had missed his calling and studied medicine. After graduating from Starling Medical College, he located at Jackson-town, Ohio.

I. F. Reynolds Hill, '96, has been with the paymaster's department of The Woolson Spice Co., Toledo, since graduation.

Mr. Frank Ruhlen, '96, was superintendent of the Dellhurst farm, Mentor, O., in 1897, and has been Assistant in Agriculture, O. S. U., since September, 1898. He also maintains an interest in the Ruhlen Stock Farms at Plain City, which makes a specialty of pure bred Shropshire sheep.

John Hayes Bone, '96, graduated from the science course of the O. S. U. in 1893. After teaching school two years, he returned to O. S. U., and graduated from the course in agriculture. In the spring of 1896, he became Assistant in Agriculture in the Oklahoma Agricultural and Mechanical College, where he did good work. He resigned this position in 1899, having married in the meantime, and began farming at Shadeland, Ind.

Philip Baer, Jr., '97, spent one year after graduation as operator of a creamery at Gratiot, Ohio, which position he resigned to take charge of his own farm at Canal Dover, Ohio. He is making a specialty of the retail milk business in connection with general farming.

Homer C. Price, '97, spent one year after graduation at Cornell University, studying horticulture. Since then he has been Assistant in Horticulture at O. S. U., and has recently accepted the position of Professor of Horticulture in the Iowa Agricultural College. The O. S. U. thus loses one of her ablest young men. He, also, maintains a financial interest in a large farm in Licking county.

John F. Cunningham, '97, upon graduation was appointed Assistant in Horticulture at O. S. U., which position he held until September, 1899, when he was appointed Associate Editor of the Ohio Farmer at Cleveland. During Mr. Cunningham's connection with the University he was a popular man in the Glee Club and other student organizations. He was also Editor of THE AGRICULTURAL STUDENT.

CULTURAL STUDENT and Secretary of the Columbus Horticultural Society.

Ernest Scott, '97, entered the Ohio Medical University and graduated with the degree of M. D., in 1900, and is now a member of the medical staff at the State Hospital for the Insane in this city.

M. R. Shellabarger, '97, after graduation took charge of his home farm at Garland, Ohio, where he had been engaged in general farming. He has taken great interest in local farmers' organizations and is secretary of the leading agricultural society in Miami county.

Albert Warren Nettleton, '98, has remained with the home farm since its graduation and occasionally gets back to his alma mater.

Clarence W. Waid, '98, who took the course in horticulture and forestry, became an assistant in the Department of Horticulture of the New Hampshire State College, where he has been until March 1, when he became Assistant Horticulturist to the Ohio Agricultural Experiment Station.

Carl J. Miller, '98, is farming at Franklin, Ohio, and is making his well-known capacity for business tell.

John C. Britton, '98, is in charge of the remedial force for the State Horticultural inspection, conducted by the Ohio Agricultural Experiment Station, and is at present located at Mentor, O.

William C. Mills, '98, was many years ago a student of the O. S. U. Afterward he became a druggist, located at Chicago, O. Here he became very much interested in Archaeology and made a large private collection. In 1896, he re-entered the University in the course in Horticulture and Forestry, where he became an enthusiastic student as well as an inspiration to his fellow students. Since graduation he has been Curator of the Ohio Archaeological Museum, O. S. U.

George A. Flickinger, '98, spent the first year after he graduated in a creamery in Mercer county. The following winter he spent in post-graduate work at O. S. U., making a specialty of dairying. Since then he has been Instructor in Dairying in the University of Tennessee, Knoxville, Tenn.

Chalmer Kirk McClelland, '98, was sergeant of Company A, Fourth Ohio Regiment and went through the Porto Rican campaign. Since the regiment was mustered out of service, he has been teaching school and farming at Andover, O.

William Henry Gilmore, '98, has been farming at Millersport, O., and doing post-graduate work at the O. S. U. during the winter terms. Mr. Gilmore is a money maker and has recently purchased a good 126-acre farm near Basil, Ohio.

Arthur Grant Abbott, '99, soon after graduation, became foreman of the H. S. National Dairy Farm at Kearney, Neb. He married in September, 1900, and is now farming in Medina County, Ohio.

Clarence Clawson, '99, added the degree of D. V. M. to that of B. Sc., by remaining another year with the O. S. U. in the College of Veterinary Medicine. He successfully passed the civil service examination for the meat inspection service of the Bureau of Animal Industry, U. S. Department of Agriculture, and is now assistant meat inspector for the Government at Kansas City, Mo.

Oscar Erf, '99, was upon graduation almost immediately called to the position of Instructor in Dairying at the University of Illinois, where he continues to share in the progress of the College of Agriculture of that institution.

Marion Imes, '99, went at once to superintend at dairy of one hundred cows at Dover, N. H. In 1900, he received

his M. S. degree from the New Hampshire State College, and has since then been Assistant in Dairying and Veterinary Medicine in that institution.

Fred S. Johnston, '99, was called immediately after graduation to the position of Assistant Professor of Agriculture in the New Hampshire State College, where he is making quite a record as a teacher.

Leonard C. Warden, '99, has, since graduation, been in business in Chicago. Just at present, he is at home at Avon, Ohio.

M. F. Miller, 1900, during this year, has been a post-graduate student at Cornell University, doing special work in soils and horticulture and has recently been invited to accept a position as Field Assistant with the Division of Soils, United States Department of Agriculture.

F. J. Tyler, 1900, has held a fellowship in the Department of Botany during the present college year.

C. N. Mooney, 1900, served as Student Assistant in the Weather Bureau at Columbus until his recent appointment as Field Assistant with the Division of Soils, United States Department of Agriculture. He has been assigned to work in North Carolina for this summer.

E. O. Fippin, 1900, was appointed to a Student Aid position with the Division of Agrostology in the United States Department of Agriculture after graduation, and held this position until recently, when he was promoted to the Division of Soils as Field Assistant.

F. W. Taylor, 1900, since graduation, has had charge of the Milk Testing work of the Ohio Agricultural Experiment Station and has recently been invited to accept a position with the Division of Soils, United States Department of Agriculture.

V. H. Davis, 1900, ex-editor of THE STUDENT, has been spending the year as

post-graduate student in Soils and Horticulture at Cornell University, and was recently offered a position with the Division of Soils. He declined this position, however, to accept the appointment as Assistant in Horticulture at O. S. U., the position made vacant by Mr. Price's resignation.

C. B. Steward, 1900, after graduation, remained in charge of the Dairy Herd at O. S. U., and registered as a post-graduate student in Animal Industry. At the January meeting of the Ohio Shorthorn Breeders' Association, Mr. Steward was elected to the responsible position of Secretary of the Association. He has now given up his school work and will devote his entire time to the management of the herd of Shorthorns, which is owned by him and his father under the firm name of J. B. Steward & Son, Marcy, Ohio.

A. G. McCall, 1900, since graduation, has edited THE AGRICULTURAL STUDENT and pursued advanced studies in the University. He has recently accepted a position as Field Assistant with the Division of Soils, United States Department of Agriculture.

Miss Laura Anna Weisman, 1900, was the first young woman to graduate from the four-year course in Domestic Science, having entered the University from the Columbus High School one year before the Department of Domestic Economy was established. Doubtless she was preparing herself for the attractive field of teacher in Domestic Science, but instead she was, during the holidays, married to Professor Charles W. Burkett, '95, Head of the Department of Agriculture, New Hampshire State College.

"The best laid schemes of mice and men,
gang aft a-gley."

A little more than one-half of the young men in the above list are in business for themselves, principally farming,

while the rest are working on salaries. THE AGRICULTURAL STUDENT has fairly definite information concerning the compensation which seventeen of the latter class will receive during the present year. Two have positions at \$2,000 per annum; one at \$1,200; three at \$1,000, while a conservative estimate places the average compensation of the seventeen for the coming year at \$950. We have no hesitation in predicting that those who have been farming have done equally well.

We hope at some future time to give our readers some account of those who have finished the short, or two-year courses, in agriculture.

TAKING ACCOUNT OF STOCK.

Result of a Year's Work on Woodland Farm.

This is a farm in central Ohio. It is of average fertility, naturally rather wet and boggy; has been tiled with about 16 miles of underdrainings; has had cattle and sheep fed on it for thirty years. It is not above the average farm in fertility. It consists of about 250 acres. A small part is in woodland, about 40 acres being in woodland and blue-grass pasture, the rest devoted to corn, beardless barley or alfalfa. Alfalfa is the main crop grown.

In 1890 the gross receipts from Woodland Farm were less than \$700.00. The expenses can not be accurately determined, but were perhaps about \$300. Taxes were in addition, nor have they been taken into account in the statement that I am about to give. In that year the writer took hold of the farm upon the death of his father. At that time it was largely in pasture, and not all sufficiently drained. Cattle and pigs were fed. At no time has there ever been much hay or any grain sold from the place, unless perhaps grain might

be sold for seed purpose. Each year until the present one corn and oats have been bought. Some years wheat bran has been bought in considerable amounts.

In the early '90's we were engaged in draining, fencing and getting in shape for work. We seemingly lost money year by year. In truth we were not losing money, but we were putting it into the ground in a permanent investment. We began sowing alfalfa in 1890. It was several years before it was an important crop with us. As our alfalfa crop has increased so has the labor bill. It is now about four times what it was ten years ago. That does not alarm us, the men need the employment and we are glad to give it to them in productive labor.

Last year's farm operations consisted in growing some 250 tons of alfalfa hay, about 45 acres of corn and 30 of barley. This year we grew more corn, but more hay and barley, and though the labor bill is for the present year, and during the last three months of last year. We sold during 1900 a good deal of alfalfa hay at good prices, \$10 to \$12 per ton, which is certainly above the average price that could be expected for it.

Our stock consisted in pigs, a few cows, not productive except of home comforts, a flock of Dorset sheep, perhaps an average of 75 ewes and a lot of feeding lambs from the Western ranges, about 750.

In criticising this report the labor bill will be thought enormous. I was away from home so much that I did no labor worth mentioning. My brother charged \$500 for his labor and superintendence. We laid a good deal of tile and repaired some buildings.

Expenditure: Feeding lamb.....	\$1,579 48
Dorset sheep.....	383 75
Labor.....	1,500 00
Supplies	587 85

Total\$4,051 08

Receipts: From sale of mutton,	
sheep, hay, barley, etc.....	\$6,253 23
Deduct expense	4,051 08
Balance on right side	\$2,202 15

It may be objected that the sale of Dorset sheep influenced this result considerably. I admit that this is true, but, on the other hand, had we not had them we would have been able to give more attention to other details, and it is probable that we would have done nearly as well. The item of supplies includes a quantity of corn bought. Owing to the feeding of stock and saving of manure our corn production is steadily increasing so that this year we are buying little if any corn, and it may be that we will not need to buy much in the future. However, we think the purchase of grain by a feeder entirely defensible and business-like.

The main thing that has made this profit has been the alfalfa plant. Having meadows of alfalfa we have had abundance of pasture when other people's pastures have been dried up. We have had great quantities of hay when hay was scarce. We have been able to construct a system of farming and stock feeding and stay with it, regardless of seasons, when, had we been dependent on red clover, we would have been forced as others were, to shift about and change our ways with every failure in the clover crop. Other men have made as much money as we have by feeding corn and clover, but they have not always been able to get the clover.

There are a number of very strange things about alfalfa. I think the strangest of all is this, that our neighbors, seeing our meadows year after year, are yet without similar meadows, and largely uninformed as to the properties of alfalfa and the way to get it. To illustrate. We were making hay one day in early June in the field by the Rosedale pike. Two men came along

riding side-by-side in buggies and talking as they rode. It is necessary to speak pretty loud to be heard under such conditions, and so without eavesdropping I heard what was said. Our hay was rolling up into pretty large windrows, and we were shocking it, and as it was nice and green it seemed to me it looked very pretty. My neighbors evidently did not admire it, for this is what I heard: "What is that stuff they are fooling with over there?" "I don't know," his friend replied, "but it is some darned stuff they raise instead of hay."

Now, I like to see people conservative and not fall over each other to adopt new things, but there is such a thing as carrying conservatism too far. Alfalfa is not a new thing. It happens to be new to Ohio, but it has been grown for more than 2000 years. Wherever it has been grown successfully it has been always regarded as the greatest of forage crops. It can not be grown on more than 10 per cent of the Ohio soils. There are whole counties and sections that are too poor and that have too thin and cold soil for it. We happen to live in an alfalfa belt. All of our country, much of Madison, Clark, Union and part of Logan counties will grow it. That is why we should take up the culture of it. But there is not a great lot of even our land adapted to it naturally. We can not sow it all over our farms and get success. I'll tell by and by where you can and where you can not grow it. First as to its value.

An acre of good alfalfa in Champaign county can be cut four times every year unless it is too dry. It will yield from 4 to 7 tons to the acre, during the season. A ton of early cut and well cured alfalfa hay is worth in feeding value nearly double what timothy is. It is worth a little more than wheat bran. It is worth more than corn, to feed alone. It is yet more valuable when fed in con-

lection with corn. It has in it elements that go to make animals grow, to make cows and ewes give milk. It is the best of all foods for the growing animal. It is hard to set a cash feeding value upon alfalfa as it all depends upon what you are getting for your product of beef, or mutton or milk, but it is safe to say that we can call it worth \$8 per ton and feed it to our lambs and make a profit on it. An acre of good alfalfa then will yield you every year at least \$30 and may yield you as much as \$50. We have a few acres of dry creek bottom that has yielded hay that we could have sold for cash for over \$100 per acre during the past two years. And we have had some small areas of alfalfa that have hardly paid for the mowing. Now what is the reason of this difference?

If you want to know exactly what sort of land you have and how it has been cared for sow alfalfa upon it. If it grows rank and rich and stays year after year you may know that there is a deep, well drained soil, a soil where manure has been put, where you have not been robbing the land by selling off your grain. If your alfalfa has stems like knitting needles and in the winter the roots heave out there are two things probably wrong, the land is too poor and too badly drained. Our worst white-clays, if you will drain them and manure them, have in them enough lime and mineral elements so that they will produce first-rate alfalfa. They will yield a good interest on a valuation of \$150 per acre. But without the manure and the tile you had better sow red clover, and probably better yet lay it down to blue grass.

Some of our best alfalfa is on thin white clay, but we manure it well before we sow the alfalfa. There is no crop that responds so well to manure as alfalfa. Ashes are a good fertilizer for alfalfa, barn manure is the best. Prepare the land for alfalfa then by manuring it

thoroughly and growing a crop of corn on it. Then keep down the weeds in the corn so as to clean the land well of weed seeds. Sow the alfalfa the next spring. The great danger with our people is that if they have a good, rich piece of land they can not bear to devote it to grass, it must go to corn year after year until it is worn, then it is time, they think, to lay it down to grass. Now, go the other way with your alfalfa, give it the very richest and driest land you have, for it will pay on such land and it will not pay on the thin soil. An acre of good alfalfa will bring you in much more clear cash than an acre of corn would on the same soil. And there is not the same effect of impoverishing the soil. Alfalfa improves soils. Corn after a time, wears them out.

If you have not a piece of good, rich dry clay then choose some rich, black and well-tiled land. Alfalfa grows well there. It will not live at all on wet black soil. The deeper down the water is the better. Don't think you must sow a large field the first time. Take five or ten acres of your best land and sow it in such a way that it will be sure to succeed. Then you can extend your areas as you learn its nature. We sowed first one-third of an acre. Next about three acres. And steadily we have increased our sowings. We have had to rustle to get the land ready for the alfalfa. It has meant the laying of tile, the hauling out of manure. And we will not consider the farm right until nearly every acre will grow good alfalfa.

The best way to sow alfalfa is to plow the land deep in the spring or winter. Turn up a little new soil. Harrow it down and sow beardless spring barley at the rate of two bushels to the acre. Sow 15 pounds, or a peck, of alfalfa seed at the same time. I usually roll the land well after sowing. This makes the alfalfa do better, but is sometimes hard

on the barley. Alfalfa will come up through very firm soil and thrive better than when it is too loose. Let the barley ripen and cut it for grain. Then when the alfalfa starts up a little clip it with the mower. Clip it close. It will start again and after a month or so clip again. Keep the stock all off until next year. It is better to keep stock off for two years. Begin mowing the second year as soon as blossoms form. After the first crop is taken off it will mature another in exactly 30 days. Do not delay cutting this second crop. It will take about 35 days for the third crop to grow. Take it off promptly. Then in 35 or 40 days there is the fourth crop. Take it or graze it.

There is a point of great importance in the growth of alfalfa, it is responsible for half the failures. Poor soil is responsible for most of the rest. This point is the leaf blight, or rust. If alfalfa is left standing too long there comes on the leaves a reddish rust. This rust causes the leaves to fall. Then the stem becomes woody and the hay is of little value. And if it is not cut there will not be any more growth of consequence. As soon therefore as this rust is seen the alfalfa must be cut. And it must be cut no matter if it is a small growth. It will as soon as it is cut start to grow vigorously again. This rust will not form in less than about thirty days. That gives the alfalfa time to make a crop.

Another point. During a dry time the growth may be short. Cut it just the same when the time comes. It will then be ready to take advantage of a rain and make the next crop. If you have not cut it and the rain comes it will not grow. The lesson is, cut it on time whether it is little or big.

The third year is the best in the alfalfa's life, though it may not decline for ten years. Keep all stock off it after

frost, it is deadly then. Stock injures it greatly by treading on it after being frozen. Do not pasture it close either in summer. It is the best pasture on earth for pigs, horses, cows, sheep and chickens. There is the same difficulty regarding bloat that is in red clover. After frost there is perhaps more danger. Yet the danger is slight if stock, after being used to it are never taken away from it until frost, then taken away for good.

Now for a few don't's.

Don't sow alfalfa on poor soil.

Don't sow alfalfa on wet soil.

Don't forget to clip it three times the first year.

Don't turn any stock on it till the next May.

Don't let alfalfa hay get dry before raking.

Don't fail to cut your hay in time. That means to be ready to cut by June first. Don't ever let stock on your alfalfa meadows in cold weather.

Don't sow alfalfa seed on unprepared soil, as you do clover.

If it fails with you, manure the land and try again.

JOSEPH E. WING.

HOMER CHARLES PRICE, M. Sc.

Homer C. Price was born February 13, 1875, near Newark, O. He received his early education at a district school and in the fall of 1892, entered Doan Academy, Granville, O. He completed the scientific course in two years and in the fall of 1894 entered the Agricultural College at the Ohio State University. Here he completed the course in three years, graduating with the class of '97, with the degree of B. Sc., in Agriculture.

After graduating at O. S. U., he returned to his father's farm, where he re-

mained until the fall of 1898, when he received the appointment to the Fellowship in Agriculture at Cornell University, where he graduated with the class of '99, with the degree of M. Sc., in Agriculture.

He again returned to the farm, but such men as Mr. Price are wanted in the world today, and several flattering positions were offered him. Of these, he chose the position of Assistant in Horticulture in his Alma Mater, in order that he might be near his parents in their declining years.

Mr. Price was always active in college affairs, but was best known as a hard working, persevering student, and success always crowned his efforts.

He was an active member of Townshend Literary Society, holding all the responsible offices in the Society, including that of President.

He was a member of THE AGRICULTURAL STUDENT staff in 1896-97, and also contributed many articles of special interest to several of the leading agricultural journals.

Several months ago Mr. Price received a call from the Iowa State College to the position of Professor of Horticulture and Dean of the department. He at first declined the offer but after a great deal of persistency on the part of the Iowa officials he at length accepted the place and will enter upon the discharge of his new duties on the first of May, 1901. Not only is the position one of great responsibility and honor but it is one carrying with it the handsome salary of \$2,000 per year. Iowa State College is to be congratulated upon securing Mr. Price's services, for he is without doubt one of the foremost men among the graduates from the College of Agriculture of the Ohio State University. While a student in the University he was considered by both his fellow students and

his professors as one of the most diligent and successful students in college, and his career since has in no wise been a surprise to his many friends.

MY IMPRESSIONS OF THE CHICAGO TRIP.

A paper read by Modesto Quiroga, freshman student in agriculture from the Argentine Republic, before Townshend Literary Society.

I do not know whether I should let you hear my impressions of the Chicago trip. You know very well my difficult situation. My South American Spanish tongue is still awkward in handling the rich and wonderful idioms of your hard English language.

I hope that you will be as kind and indulgent as usual with this stranger who left his home because he wished to become acquainted with your land of liberty; because he desired to learn something from the practical and free life of your bright people; because he comes from a free land where the free thought is loved as well as you love your own land and liberty.

Professor Knight, in discussing "Some College Ideals," said: "Each age has its ideal." This historical law is also a truth in human life. We may say in a broad sense: Society is a real organism made up of cells—each man is a social cell, and each one has an ideal. The ideal of any age, like the ideal of any race, nation, people or social institution is made up, as a whole, of individual ideals. Therefore, our Chicago trip was not an isolated fact in the life cycle of our college life. It was intimately connected with the main ideal of our University. It was only a natural consequence of the O. S. U. scientific spirit which may be easily noted in its daily labor.

My impressions from this trip are found in two directions: First, the city situated in the center of the greatest grain-growing and stock-raising region of the world; second, the closeness of relation between O. S. University and the great International Live Stock Exposition. The big "Garden City," with its "Sky Scrapers"—mammoth buildings erected on the steel-frame system, showing occasionally a bit of gothic or French architecture—full of its busy men, is an ideal place for a simple exhibition.

The stockyards of the city where thousands and thousands of hogs and cattle are killed every day; the hundreds of mills and factories which daily change timber of the North into planed lumber, doors, sashes, houses and furniture, railroad cars and agricultural implements; the universally well-known university, the numerous public schools, the newspapers and scientific magazines of every kind, and finally the well expanded meshes of railroad leaving to and coming from the world; all this shows the fact that in the heart of the city, there is a great mass of living matter, human energy restored under a wonderful activity of increasing life which always is acting, and always busy in producing new, more and better life. At our side of the great commercial, educative and industrial city is the Live Stock Exposition, with its many branches of cattle breeding. Thousands of visitors to the exhibition bring the city in touch with business men who buy immense amounts of manufactured and agricultural products and distribute them to the four corners of the republic and of the earth. I am sure some of the beef we raise will feed the English soldier in the Transvaal, much of it is consumed here in Columbus, and it goes all over the earth, furnishing nourishment to the laborer and scholar.

Let us go within the stockyards—in the Dexter Park amphitheatre—a spacious building with a seating capacity of nearly 3500, and with accommodations for several hundred head of stock. The public auction sale, and the judgment of the capable men are discriminating and pointing out the latest and most valuable triumphs of science reached in its practical application in the livestock raising.

The Union Stock Yards, embracing a plant covering several hundred acres; employing 4000 men in its different departments, handling thousands of cattle, hogs, sheep and so forth; the visitors daily increasing by hundreds or thousands; and, lastly, perhaps, the 1,698,575 inhabitants of the city coming to the exposition, give one, in approaching, an idea of the successful accumulation of active life involved in this recent international tournament of the livestock industry.

Gentlemen, our vision is not the vision of the past. Our plastic nature is in changing constantly under the varying agencies of our physical and social environment. Each atmosphere involves its mode of life, and has stored determinant powers of the new mode of life. The main direction of the human character is marked as a result of its own vital powers as a unit. Nothing stranger may be found in this eternal chain of connected cause and phenomenon beginning in the lowest forms of matter, and ending in the most bright brain of any race.

O. S. University growth is found in this environment, and in this way it represents a special phase of the social structure of the country. Naturally, as a school of the people, O. S. University must be present with its free spirit of investigation, everywhere the scientific energy offers a chance of showing

its latest and most substantial conquests.

We went to Chicago and mingling in the crowd we passed through it during one of its most active periods of life. I am sure my mind is changed in some extent, while in others it is fixing many new ideas.

The man must never miss opportunities like that, and specially the young man who needs to become acquainted with any good environment which may help him better in his normal development, and in bringing out his personality.

This social doctrine is the basis of your race's triumph. This is the practical school which in so short a time has worked out the wonderful growth of your gigantic country. There, in the Old World, our London, our Paris or our Berlin, but, here, in the New World, is already our New York and our Chicago.

The races are coming from all the world to our land. America is the future land of the races. To act is always the supreme historical law. *Excelsior* must be our motto.

THE FOOD VALUE OF MEATS.

It is not the purpose of this article to discuss the pros and cons of vegetarianism. Man's adaptability to conditions is great, and while men may live and apparently thrive for a time upon a one-sided diet, a generous mixture of animal and vegetable food is best calculated to enable a man to meet the exigencies of our civilization and the nervous strain of our large cities.

In this country our prosperity, the excellence of our meat supply, and the habit which most Americans have formed of eating a good deal of meat, makes it more important to dwell upon

the ill effects of eating too much meat, rather than upon the necessity of eating some.

Fat and lean meat of animals taken together contains all the fourteen elements of which the human body is composed, but not in the same proportion. A man could, therefore, live on an exclusive meat diet, though owing to the great concentration of such food, it would not be advisable for him to do so. The human body requires four times as much heat-producing as muscle-making food and as the main function of meat is to repair old tissue and form new, he would need to eat great quantities—about six and a half pounds daily—to furnish heat which could be much more advantageously derived from some form of starchy or saccharine food. These, too, would furnish the bulk needed to keep the bowels in proper condition, and would lessen the waste products to be eliminated by the kidneys.

In a few cases of disease such as flatulent dyspepsia, chronic gastritis, diabetes, obesity and chronic dysentery, an almost exclusive meat diet, with only a little dry bread, has been found beneficial.

While for well persons, the stimulating qualities of meat eaten in moderation are desirable, the deleterious matter of which the system must rid itself when too large an amount is indulged in, thwarts the very purpose for which it is taken and renders the brain dull and the whole person lumpish.

To lay down a general rule for the amount of meat to be consumed by a person in a day would, however, be impossible since the state of health, the age, occupation and climate all modify very materially the proper daily ration.

It is thought, and not without foundation, that meat makes the blood rich

by increasing the number of red corpuscles in it. It is, therefore, often prescribed by physicians for anaemic persons and consumptives. Raw meat, which is sometimes given in such cases, has no advantage over slightly cooked meat, in fact the latter is much more wholesome. Meat should be entirely prohibited in acute or chronic Bright's Disease, gout and rheumatism. It is well known that meat is conducive to tissue building and for this reason children over eighteen months old should have meat at least once a day and better twice a day. Growing boys need much meat and should be allowed a larger amount at a meal than their elders; but no person in health should take meat more than twice a day. A small boy may, with propriety, eat from five to six ounces at a meal. Boys of ten years from seven to eight ounces, and large boys from seven to twelve ounces. Men and women over fifty years of age ought to eat sparingly, especially of meat, as the waste products of meat are the urates, phosphates, sulphates and urea which must be excreted by the kidneys and hence tax these organs, besides making all the fluids of the body acid, causing rheumatism and gout.

Persons eating much meat should have abundant out-door exercise, as nearly every particle of meat must be burned up in the body and large quantities of oxygen are needed for this. Sedentary men should, therefore, not eat heavy meat meals especially during business hours.

Fat furnishes heat, but in so concentrated a form that a certain amount of fat produces two and a half times as much heat as an equal amount of starch or sugar. On this account pork with other food forms a suitable diet for cold

weather, since the fat and the lean of an ordinary portion contain five parts of heat-producing material to one part of muscle-making substance. Veal is a good meat to serve in warm weather, as even the lean portions of it contain but little fat; but veal is only suited to persons with absolutely normal digestion, since, being an immature meat it is less easily digested and assimilated than beef or mutton.

Meat has been supposed by some to tax the digestive organs proper, more than other food; but, while it remains in the stomach from an hour to two hours longer than vegetables, the digestion of the lean part is practically accomplished in the stomach and little work thus devolves upon the intestinal ferments, so that it does not require more energy, on the whole, to dispose of meats than to dispose of foods such as starches and sugars which are hurried through the stomach, but must undergo a long process of intestinal digestion.

The products of the digestion of meats, moreover, enter more quickly into the blood, and its sustaining effect is more quickly felt than when another kind of food is taken. Any sudden exertion is known to be more easily withstood by a man accustomed to a meat diet than by another.

The thing which does tax the digestive organs is to oblige them to supply all the needs of the body from food of one kind, be that either meat taken entirely, or vegetables and starches eaten exclusively. Meat, vegetables and bread may be eaten together; or milk or cheese may be substituted for meat, and eaten with vegetables and bread. Either of these combinations forms a good diet for well persons.

HELEN G. SHELTON.

THE FARMER AND THE AGRICULTURAL COLLEGE.

If a speaker had been asked twenty-five years ago to address an intelligent audience upon the subject of the Farmer and the Agricultural College, he would have found that the first part of his subject, the Farmer, was a common, ordinary, everyday character with a great long history, while the second part, the Agricultural College was without a history and as yet was only a matter of prophecy. Today both the Farmer and the Agricultural College are a matter of history, and both are vital agents in our agricultural, industrial and commercial progress.

The history of the farmer is as old as the history of the human race. As Emerson said, "The first farmer was the first man and all historic nobility rests upon the possession and use of land." On the other hand the history of Agricultural Colleges is comparatively short. It is only within the last quarter century that they have been established and taken their present high place as a means of education among the farmers of the country.

I say the Agricultural College is a means of education to the farmer. What! Does the farmer need an education? This is a question which has been asked time and again but has never yet been answered to the full and complete satisfaction of all, and perhaps never will. About a year ago in a certain State Legislature when a certain appropriation bill for educational purposes was put up for discussion, a certain member said that he believed no man needed an education unless he intended to enter one of the so-called professions. All beyond a common school education was time thrown away. Education, he affirmed, makes men rascals, and never before had we

so many educated men as now, and never before were there so many rascals as there are today.

What a damper must such talk put upon the ambitions of the country boy who longs to get an education? And how many young men are there today being kept away from school by parents and professed friends who foster just such ideas as those expressed by the member of the State Legislature?

No true friend of society and education can entertain that sort of doctrine, which, to say the least, is false and misguided. The idea that education makes men rascals; it is absurd. Most rascals, I will admit, are educated men, but then education is not the cause of their rascality. Character does not depend upon the amount of knowledge a man possesses. If we wish to know how big a rascal a man is we do not proceed to examine him in botany or geometry; we rather inquire into the tendencies which have come to him by hereditary descent, and to study the circumstances and conditions which have surrounded him in life.

But why, it is asked, should the farmer boy want an education? Because he cannot be at his best as a citizen unless he has the most thorough knowledge possible of his business. Again he ought to be educated because he cannot become a good all-the-way round and all the-way-up man if he is not. The farming interests of this country have suffered untold losses because men have followed along in the same narrow channel year after year, plowing and harrowing and sowing just as their fathers did without having grasped the opportunities for learning and advancement which have been presented to them.

The greatest mistake of the farmer is that he does not study his profession as do the lawyer and the doctor.

Daniel Webster once said that it required more brains to be a great farmer than a great statesman. The farmer must study his land and his crops in order to practice the greatest possible economy. Everywhere the poor farmer is going backward and the good farmer is going forward. The farmer must follow his specialty closely, he must watch the markets and master thoroughly every detail of his business. Much of the discontent which one meets with everywhere among unsuccessful farmers is due to the fact that farmers as a class lack business methods in the conduct of their own affairs. Farming has become a science and the farmer who wishes to administer his affairs to the best advantage must study farming upon a rational and scientific basis. It requires as much natural ability to run a farm properly as to run a manufacturing enterprise, because the farmer, in an equal degree with the manufacturer, must understand the principles of the production, distribution and consumption of wealth.

There are, however, many successful farmers today who have not had the advantages of a college training, but they have received an education which is not to be depreciated; it was gotten at a cost of years of experience. Their advantages were certainly limited and the fact that they succeeded at all shows that they were men of more than ordinary ability. What might they have done and what might they have been had their circumstances been more favorable and their opportunities the same as their children enjoy today?

Surely, if farmers, as a class, are to be successful, the younger generations cannot follow out the same lines as their fathers did and compete successfully with the progress in other industries and intelligently fill the place open to them in the world's economy. Do not

compel the boys to pursue the same costly and lengthy course in the school of experience which the fathers have been compelled to take. Give them the advantages which are to be derived from the experiences of others who have spent nearly a life-time in gathering facts and deducing principles and putting them in an easily understood text-book form which the student is able to grasp in three or four years' hard work instead of in thirty or forty, as their fathers have done.

The greatest value of an agricultural training is not in the specific things taught. It is found rather in the developing of judgment and the training of the eye and hand. As condition are never twice alike, that system of education which makes one self-reliant, which enables one to grasp the situation however it may present itself, is the most valuable. Our leading Agricultural Colleges are now teaching not so much *how* work should be done, as *why* work is done. It would be a simple matter for a teacher of agriculture in New York, for example to tell how to raise a big crop of wheat in New York, but the instructions, perhaps, would be entirely at fault when applied to wheat raising in Ohio or some other State. If, however, the principles which underlie successful wheat culture are taught they will apply anywhere. It is not a question of how to plow and fit the land for wheat or any other crop which should be taught, but why the land is plowed and so fitted.

To the farm boy with no training in his profession a larger part of the work is mere drudgery. The work is done because the father before did work in the same way. But to one taught the principles which underlie agriculture such monotonous operations as plowing and harrowing take on a new interest. Instead of merely turning over a

slice of earth, the field is changed to a laboratory, and the plowman becomes a chemist or a soil-physicist and manipulates the ground with a distinct purpose in view.

Now, having seen something of the need and value of an education for the farmer, let us imagine briefly as to where this education may be best and most thoroughly obtained. It has been shown, I hope, that the course of training to be had alone and entirely on the farm is too long and costly. Where, then, shall the student of agriculture go to properly fit himself for his life-work? I would say let him go to the Agricultural College. Here he may study botany, chemistry, geology, entomology, soil physics, animal husbandry and animal mechanics, agriculture and constitutional history, rural and political economy, and the various sciences and languages to his liking. All these things will stimulate the student to a desire for more knowledge, and will give him untold opportunities for the betterment of himself and his profession.

The people of Ohio have spent over \$100,000 in the construction and equipment of a building at our State University for special instruction in agriculture and the kindred sciences. There is maintained there a corps of instructors whose superiors are not to be found in any similar institution in the country. These men are working zealously for the promotion of agricultural interest in our State. The College of Agriculture with the opportunities and courses of study it affords belongs to the farmer. What use has he, and what use is he going to make of them?

Ten years ago there were thirty-one students enrolled in the College of Agriculture at our State University. Five years ago there were eighty-three. Now there are two hundred and ten. These

figures certainly show a healthy increase, but the number is yet far below what it ought to be. Why? Simply because the farmers' boys have not yet been awakened to the necessity and importance of an education in their profession. The time is past when men can stand up and sneer at book farming and say it is a farce. For, my friends, there is no profession on earth that allows a greater display of intellect than does farming, and no where is it needed more in order to increase the profits. The farmer is called upon to solve practical questions in chemistry, in botany, in soil physics, in bacteriology, in veterinary medicine and in fact in nearly all the sciences. To do this he must be educated, and his education not only makes his work easier, but makes it more pleasant and more profitable.

There is a great deal of satisfaction that comes to the farmer from seeing a plant, an insect, a bird or an animal and be able to name it and tell something of its life-history, and especially to know of its economic importance to him. Such an education helps the farmer to properly appreciate the dignity of his calling, and help to place his profession in the front rank of the world's greatest industries, where it rightfully belongs.

F. W. TAYLOR,

Before the Farmers' Institute at Wooster, Ohio.

There will be only one more issue of THE STUDENT for this college year. A large number of copies have been sent gratis during the year to friends likely to be interested in our work. Any of these who like our magazine and who feel that it has been worth fifty cents to them, would gladden the heart of the business manager by sending him the above amount.

NEW BOOKS.

PRACTICAL AGRICULTURE. By Charles C. James, M. A., Deputy Minister of Agriculture for Ontario. D. Appleton & Co., New York. Cloth, pp. 203.

This little book is intended to give the reader a knowledge of the science of agriculture rather than the art; to tell him the "why" rather than the "how." The first principles of the various sciences are included and their application to the art of agriculture pointed out. The author deals only with the simple first principles, but he handles the subject in such a pleasing way as to make the book quite interesting for the old as well as the young for whom it is intended. Many full page halftones add greatly to the interest of the text and the beauty of the volume.

CABBAGE, CAULIFLOWER AND ALLIED VEGETABLES, FROM SEED TO HARVEST. By C. L. Allen, author of *Bulbs and Tuberous-rooted Plants*. Illustrated, 12mo, pp. 100, cloth. Orange Judd Co., New York. Price, 50c.

All the various types and varieties of cabbage, cauliflower, broccoli, Brussels sprouts, kale, collards and kohlrabi have sprung from one original form or species, thus furnishing one of the most interesting and wonderful illustrations of plant variation in the whole vegetable kingdom. The author if this book has devoted a life-time to this study; and living on Long Island, in the very heart of the most favorable cabbage-growing section in the United States, and being himself largely and practically interested in this industry, is probably more familiar with its various details than any other man. Considerable space is devoted to the explanation of the requirements, conditions, cultivation and general management pertaining to the entire cabbage group. After this each

class is treated separately and in detail, as indicated in the sub-title: "From Seed to Harvest." The chapter on seed raising is probably the most authoritative treatise on this subject ever published, and will be intensely interesting and valuable to all those engaged in this industry. Insects and fungi attacking this class of vegetables are given due attention with a view of giving the reader the latest and most effective means for their prevention and destruction. There is a convincing and practical tone about the entire work, which at once assures the reader of the safety in following the instructions given in its pages.

THE SALT-BOX HOUSE. Eighteenth-Century Life in a New England Hill Town. By Jane DeForest Shelton. The Baker & Taylor Co., New York. 12mo. cloth, \$1.25.

The author applies the name "salt-box house" to the old style dwellings which from their peculiar construction resemble a kitchen salt-box. The book is devoted to a description of the colonial life of the inmates, their simple domestic habits, house manufactories and their struggles to overcome adverse natural conditions.

The reader will find in *The Salt-Box House* a vivid description of the conditions which obtained in this country a generation or more ago and which in some parts of the country continued up to within the memory of our parents and grand-parents. The whole atmosphere of the book is laden with memories of the past to which the volume is dedicated.

THE DOMESTIC SHEEP. By Henry Stewart, American Sheep Breeder Press, Chicago. Second edition, profusely illustrated. Cloth, \$1.50.

The increase in the importance of the sheep industry since the publication of

the Shepherd's Manual some years ago has led the author to bring forth a new work of wider adaptation, under the above title. The first chapter takes up the natural history and is followed by a chapter on the varieties and breeds of sheep. He then takes the subjects of breeding, feeding and barn construction. The history and uses of wool, and the prevention and treatment of diseases are discussed in separate chapters. The treatment of the subject is full and accurate and the numerous illustrations gives one an excellent idea of the different breeds and the types from which each originated.

THE BEE-KEEPER'S GUIDE. By A. J. Cook, Prof. of Entomology, Michigan State College. George W. York & Co., Chicago. Cloth; pages, 461.

This "Manual of Apiary" has a phenomenal record being now in its sixteenth edition. The first edition was published in 1876, other editions, enlarged and revised, appearing from time to time since then. Some time ago the book was wholly recast and such new matter added as to bring the subject thoroughly up to date and to supply the demand for additional scientific data. The book contains much valuable information for anyone who is interested in the keeping of bees either for pleasure or profit.

A PLUCKY GIRL. By Laura T. Meade. George W. Jacobs & Co., Philadelphia. Illustrated, cloth.

The story of an aristocratic English girl who suddenly finding herself reduced to poverty, rents a large house in London and advertises for paying guests. The house is soon filled but the expenses are more than the income so that she soon finds bills coming in that cannot be paid. To save her invalid mother from the shock, she betroths herself to a man she does not love on condition that he will assume the finan-

cial responsibility of the boarding house. Her lover whom she believed to have been lost at sea comes back, however, in time to save her from the unhappy marriage.

QUICKSAND. By Hervey White. Small, Maynard & Co., Boston. Cloth. Price, \$1.50.

The first part of the story is laid amid the rural scenes of the east, but the plot soon shifts to Iowa and finally farther west to the level plains of Kansas. The story is well told but we cannot agree with Mr. White in his choice of the majority of his characters, only two of whom are in any way worthy of emulation. The principle theme throughout the book is a protest against many of the orthodox forms of religion which carried out to their extremes serve only to make individuals and families unhappy and miserable instead of lifting them to a higher plane of living.

THE SONG OF A HEART. Christmas Mile-Stones. By Helene Hall. The Robert Clarke Co., Cincinnati. 12 mo., 200 pp., decorated cover, \$1.25 postpaid.

This is a beautiful little story of home life in the last generation as told through Christmas entries in a journal begun in childhood and carried through the life of the writer. Through incidents of bits of summer travel and the moralizing on public events, runs a love story of a husband and wife which lasts through a lifetime growing more beautiful with years.

The leading characteristic of the book is an unfaltering faith in God and in the reality and completeness of a future life.

The story closes with the death of the writer, which comes in such a beautiful and peaceful way that the sting is taken out of it, leaving only tender memories for her friends.

